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Empathic media and advertising: Industry, policy, legal and citizen perspectives (the case for intimacy)

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Abstract

Drawing on interviews with people from the advertising and technology industry, legal experts and policy makers, this paper assesses the rise of emotion detection in digital out-of-home advertising, a practice that often involves facial coding of emotional expressions in public spaces. Having briefly outlined how bodies contribute to targeting processes and the optimisation of the ads themselves, it progresses to detail industrial perspectives, intentions and attitudes to data ethics. Although the paper explores possibilities of this sector, it pays careful attention to existing practices that claim not to use personal data. Centrally, it argues that scholars and regulators need to pay attention to the principle of intimacy. This is developed to counter weaknesses in privacy that is typically based on identification. Having defined technologies, use cases, industrial perspectives, legal views and arguments about jurisprudence, the paper discusses this ensemble of perspectives in light of a nationwide survey about how UK citizens feel about the potential for emotion detection in out-of-home advertising.

Keywords

Advertising, biometric, emotion, policy, public, tracking

Introduction

The special edition that this paper features in addresses transparency and Steve Mann's notion of 'veillance in a Big Data context'. Here I follow Kitchin's (2014) definition of Big Data that plays down the role of data volume in favour of dynamism, reactivity and system scalability. Veillance examines multidirectional sensing and watching activities (Mann and Ferenbok, 2013). It expands on the unidirectional notion of surveillance, where the few watch the many, to acknowledge how citizens use personal devices and other technologies to watch the watchers, watch each other and watch ourselves. In this paper, I focus on emotional *surveillance* by advertisers, and discuss transparency in relation to the datafication (Mayer-Schönberger and Cukier, 2013) of emotions, especially how technology companies are increasingly using biometrically sensitive technologies to attempt to infer emotions. Elsewhere, I have referred to this as 'emotiveillance' (McStay, 2016). The discussion of automated emotion detection presented here should be considered within the critical

context of biopolitics and subjectivity (Lazzarato, 2014), post-Fordism (Amin, 1994), the attention economy (Kelly, 2008; Simon, 1971; Terranova, 2012), the experience economy (Pine and Gilmore, 2011), the affective properties of information (Andrejevic, 2013), critique of happiness economics (Davies, 2015) and online behavioural advertising (McStay, 2011).

Against these interests I advance the principle of *empathic media*. This refers to technologies that track bodies and react to emotions and intentions (McStay, 2014, 2016, forthcoming). Here, I focus on facial coding and advertising. By means of interviews with leaders from advertising, law and policy, I conclude that critical attention is required regarding technologies that

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make use of intimate while not necessarily private information. I progress to discuss this proposition in light of a survey I commissioned about how ordinary people feel about the out-of-home advertising that functions by means of automated emotion detection in public spaces.

Methods

I draw upon over 90 interviews with leaders in the field of emotion detection, Big Data analytics, advertising, media and technology law, and European policy makers in the fields of innovation and data privacy. The initial 90 were conducted throughout September 2015 to April 2016, but are on-going at the time of writing (July 2016). The average length of interviews was an hour and informed consent was gained. Given the sensitivity of the topic (emotion detection and emerging business practice) I provided opportunity of anonymity to individuals and/or organisations. Interviews were mostly conducted in coffee shops and business premises, primarily in the United States and Europe. Interview questions were co-created with the UK's Information Commissioner's Office (the UK's data protection regulator), M&C Saatchi (an advertising agency interested in the potential of emotion detection), the UK's Committee of Advertising Practice (the self-regulatory body of the UK advertising industry) and Privacy International (a pressure group).

I also provide results of a UK national survey of 2,068 people I conducted with ICM Unlimited in November 2015 about how citizens feel about the development of out-of-home advertising technology that uses data about emotions to improve itself. The survey segmented gender, age, social class and regions. The UK is an interesting country to examine as it has a high level of technology adoption indicated in terms of unit sales. Also, the amount spent to advertise on newer media, particularly smartphones, is among the highest in the world (Internet Advertising Bureau (IAB), 2016). As a country immersed in new media technology, and heavily exposed to advertising, it is arguably a suitable test case of the acceptability of emotion-sensitive advertising. The survey itself was part of an online omnibus survey where data on a wide variety of subjects is collected. Further, the question discussed in this paper about attitudes to emotion detection in out-of-home advertising was second in a series of five questions I asked about emotion detection (concerning other media forms and modes of emotion detection). On reliability, it is well understood that surveys cannot engage with complexity, but instead measure responses to discrete propositions (Reynolds et al., 2006). Nevertheless, the advantage of surveys, especially when conducted online, include their demographic reach (accessing

more people than would be achieved by relying on people being at home during the day for house and phone calls); low cost; and speed in generating insights about emerging topical issues (Burnham et al., 2008). While online surveys can suffer from survey fatigue and lack of understanding of context in which the survey is being completed (Rubin and Babbie, 2009), the lack of steer from an interviewer reduces the scope for reactivity, where the interviewer's 'social presence' distorts results as respondents feel compelled to incorporate social norms in their responses (Groves et al., 2009).

Recent interest in emotional life

It is fair to say that automated emotion detection is still unusual, with the exception of sentiment analysis that is an established practice for brands and organisations seeking to understand public feeling about products, brands, policies, competitors and current affairs (Andrejevic, 2013). Nevertheless, the premise of empathic media has roots in the mid-1990s with the academic work of Rosalind Picard on affective computing – work that continues today (Picard, 2007). In advertising, data collection about emotions is used in two separate ways. The first is *in-house* where audience research companies such as Millward Brown use facial coding, electroencephalography (EEG) and other intimate means of analysis to assess bodies and brains for reactions to brands and advertising (McStay, 2013, 2016, forthcoming). Marketers and advertising agencies use these services to understand how people feel about brands, and to optimise campaigns to elicit desired types of emotional reactions. In practice, this means understanding how people focus, their perceptions of ads, types of attention, the role of contrasts, and reactions to colour, music and narrative within a given ad. Of greater relevance to this paper is tracking emotion by means of sensors in our devices and environments. This entails analysis of audience emotions as people move throughout *public* spaces. Examples are few but growing. For instance, Ocean Outdoor, a UK out-of-home advertising company targets by age, gender and geolocation and has used emotion tracking. Also, at the 2015 Wimbledon tennis championship, Mindshare and Kinetic (both advertising agencies) made use of a wide range of emotional sensing technologies placed on the body and around the venue, including heart, voice and facial analytics. Another agency called Strap specialises in using biometric data gleaned from wearable devices and is also interested in emotion. As will be developed below, many in the advertising industry see use of data about emotions collected in public spaces as inevitable, although the technology is still emerging.

The case study I focus on here is from London 2015 where M&C Saatchi (partnering with Clear Channel

and Posterscope) produced an ad that *evolves* unique ads based on people's facial reactions. I argue this is a landmark campaign in the history of advertising because it was first to use data about emotions collected by automated means, and thereafter to improve itself on the basis of viewers' facial expressions. The ad was a test campaign for a fictional coffee brand named Bahio, produced to gauge public reaction to this novel emotion-sensitive advertising. When one recognises the exponential growth of digital out-of-home in recent years, the possibility of behavioural tracking in public spaces is less unlikely, especially when considering mobile devices, near field communication and public Wi-Fi. In interview Dave Cox, Chief Innovation Officer for M&C Saatchi, explained that the reason they chose a fictional brand is because they did not want to upset their clients and have their brands associated with 'spooky' advertising that records emotions (Interview, 2015). Thus, although partly a trial of the technology, it was also a test of public reaction to the technology. The ad employed hidden Microsoft Kinect cameras to infer viewers' emotions, and react over a period of views according to whether people's facial expressions were happy, sad or neutral. This is done by identifying features and muscles on a person's face, tracking their movement, and thereafter correlating this movement with named emotional conditions. Notably, in this case, images of faces were not recorded. This is an important point because if an image or data points that would allow a face to be singled out is collected, this requires viewers' consent and an opt-in approach to data collection. In addition to use of facial coding data about emotions, there is another significant feature: by reacting to emotional facial expressions, the ad altered itself so to be more effective. In an evolutionary manner, this is achieved by automatically replacing elements of the ad that fail to elicit positive emotional responses in people.

Suppositions: Emotions and ethnocentric interests

We should briefly consider computational and theoretical tenets behind automated emotion tracking (see McStay, forthcoming). In short, facial coding, the focus of this paper, is based on the psychological and anthropological work of Ekman and Friesen (1971, 1978) who argue that there are seven basic emotions and these are universally recognised in others by means of their facial expressions. These are joy, surprise, sadness, anger, fear, disgust and contempt. What is otherwise known as the Facial Action Coding System (FACS) is inspired by Charles Darwin's (2009 [1872]) universalizing and pan-cultural account of emotions and expressions by people and animals.

Today, the FACS is manifest in facial analytics software offered by market leaders such as Emotient, Affectiva, Sensum and Realeyes. There are practical and theoretical problems with this approach identified by practitioners and scholars alike. For example, in interview, Elnar Hajiyeve from Realeyes said that people are often expressionless during advertising content they are exposed to and this can lead to mislabelling of facial expressions. He also highlights how emotional reactions fall outside of the basic structure of emotions. Giving the example of smiles in Japan, he says that clients report that smiles depend very much on social context 'and are driven by different and complex display rules, making using them as an index of happiness problematic, given how many different types of smiles exist. Some smiles may even indicate negative emotions' (Interview, 2015). This tallies with academic criticism of this approach from behavioural psychologists and theorists of affect who argue that emotions are not just expressions, but have communicative functions and are tied to the social interactions one has with others (Fridlund, 1995; Leys, 2012). In my interviews, companies using technology underpinned by Ekman's ideas realise that this simplistic account of emotion is problematic. However, from the point of view of automated emotional analytics, empathic media companies say this is not insurmountable but requires that greater heterogeneity needs to be built into FACS-based machine learning algorithms. Highlighting that they have analysed millions of faces from 75 countries, Gabi Zijderfeld from Affectiva says that the machine learning approach allows them to mitigate for differently shaped faces and ethnocentric difference. Also, using the example of Japan, she acknowledges 'cultural bias that overlays [...] the polite smile in Asian countries where people mask their emotions', but states that their data and machine learning processes are able to mitigate these (Interview, 2016). As illustration she says that Affectiva's machine learning confirms sociological perspectives about collectivist tendencies in Japan where 'people in groups will dampen their emotions so not to stick out from the pack'. However, she adds that Affectiva's data shows that people are highly expressive at home – more so than in western cultures.

In addition to use of machine learning to improve FACS-based techniques, other companies seek greater contextual information (such as other arousal signals or information about what a person happens to be doing) to make emotion detection more meaningful. This is where advertising is especially interesting, particularly the programmatic variety that has built into its nature the capacity to accept and make sense of multiple data inputs. This includes: first party data from brands, stores and retail spaces; and third party data from

online tracking, location data, insights gleaned from apps and social media, anonymous credit card data and offline transaction data such as loyalty cards.

Attention, feeling, passivity and enhanced experience

On why emotions matter, Adland's tracking of emotions by automated means reflects a belief that emotions shape cognition and decision-making, steer and filter our experience of the world, and influence what we choose to do and buy. The backdrop to these technologies is what Rose and Abi-Rached (2013) phrase as a 'neuro-ontology', or a generalised interest in a neurobiological conception of personhood. However, the recent interest in neuroscience by advertising (McStay, 2013; Du Plessis, 2011) should not blind us to the fact that advertising and emotions have always professionally gone hand-in-hand. The reasons for this are multiple but include generating likeability of the ad, attention, recall, evocation, positive associations, visceral reactions and the conveyance of desirable brand characteristics (Mehta and Purvis, 2006). Likewise, despite recent application of neuroscience, advertising has long had an interest in autonomic and involuntary responses, and behaviourist attempts to bypass cognition. Similarly, since the inception of professional market research advertising has been in the business of the 'datafication' of effectiveness, or the charting of the quantitative relationship between prescribed inputs and outputs. Quantified factors include elements within messages, frequency, placement, recall, attitude, behaviour, intention to buy and reaction of individuals versus groups (McStay, 2013; Simon and Arndt, 1980). What is new and in need of attention is the increased reliance on automated sensing and use of machine learning to classify facial expressions (and other biometric inputs), perhaps especially when taking place in public spaces.

The reason why datafied emotions matter to advertising is exemplified by Alex Jenkins from B-Reel (a creative agency experimenting with proximity awareness, iBeacons and eye-tracking). He says that 'emotion at aggregate level is massively important in terms of trends' and that as attention has diversified across a range of screens and content in the 'distraction economy', agencies are 'fighting for finer slices of attention' (Interview, 2015). Beyond attention, Yvonne O'Brien (Group Chief Insight Officer at Havas) wants to understand how brands make people feel. Describing her lack of faith in traditional consumer panels and surveys, she says that 'survey-based research is limited' and while leading market surveys provide reports of how people feel about brands, she is dubious of their usefulness (Interview, 2016). This has led her to research different

methods, including biometric data about emotions to understand 'brand levers', or how to get people to act, click, buy, investigate, feel or believe. For Havas, this objective involves 'understanding people through all of their devices and interaction points, i.e. wearable devices, mobile and IoT'. In general, the aim for Havas is to 'collect it all' so to build more meaningful interaction with brands. This means generation of better records of customer journeys, or how and when people make product decisions.

In addition to attention and the belief that biometric data will provide authentic insight into how people feel, another reason for interest in data about emotions is the possibility of passive data collection. I explored this with Kim Smouter, Government Affairs Manager of ESOMAR (a worldwide trade association for the market research industry) who said that the future of advertising and marketing lies in passive and always-on data collection, and that the Holy Grail is real-time information about customer needs and emotions (Interview, 2016). Today this is dependent on advances in mobile and wearable technology, and correlation of geo-location with contextual and behavioural information. The value of passive data collection is instant access to transactions and conversations (through social media for example). Seen this way, biosensors and biometric data promise additional real-time understanding as people move throughout everyday life, the city and retail spaces.

Although the idea of a data marketplace for emotions is beyond the remit of this paper, the possibility arose in multiple interviews. O'Brien from Havas for example said she is keen to access biometric data about emotions, but does not have clear means of how to buy this data, nor could see how it could be effectively combined with existing data about consumers. She recognises however that, 'the future is inescapably programmatic and biometric' and that data management platforms (DMPs) will play a pivotal role in collecting, harnessing, amalgamating and putting this data to work (Interview, 2016). In a few years the programmatic dimension may be key. Programmatic advertising makes use of multiple incoming data sources to target ads at the right person, place, time and screen (McStay, 2016). John Curran of DataXu (a company that specialises in programmatic advertising and combining multiple data sources to build consumer profiles) offered additional insight into how an emotion marketplace would function. Speaking of his own views rather than DataXu's, he said that plugging in biometric data about emotions would not be difficult for companies like DataXu because their systems are highly adaptable. Reflecting Big Data principles of flexibility and scalability (Kitchin, 2014), these platforms are predicated on being able to add new data inputs.

His uncertainty was less about the technical practicality of incorporating biometric data into the programmatic system, but one of industry standards. On infrastructure, Curran highlights that out-of-home display media need to be attached to the Internet. Less obviously, the mechanism for buying out-of-home media space is determined by specialist media buyers that dictate the out-of-home market. This essentially takes out-of-home out of the hands of programmatic media buying agencies. The next infrastructural matter is how to benchmark quantified emotions and who would create the Key Performance Indicators (KPIs) to standardise data trading. Trade associations such as the Internet Advertising Bureau might do this but agreement of standards would be difficult.

Other agencies highlighted the possibility of enhanced citizen experience. On non-personally identifiable uses of emotional analytics in public environments, Rory Sutherland (Vice-Chairman of the advertising agency Ogilvy & Mather UK and co-founder of Ogilvy Change) describes these as ‘absolutely gorgeous’ (Interview, 2015). On the net rise of interest in automated emotion he says that he is in no doubt of this and that this is a win-win situation for both advertisers and consumers, because of ‘removal of cognitive grit’. For Sutherland this means enhanced consumer experience, improved cities/environments/technological interactions, and removal of misunderstandings to make life smoother and easier. He adds that it is important that ‘this should happen at a speed that people are OK with’.

Sutherland’s interest is especially relevant because he is a leading proponent of behavioural economics, or analysis that disavows neo-classical, rational, maximising, calculating and unemotional theories of decision-making (Thaler and Mullainathan, 2008). This is based on the belief that if one can sway emotions, one has a better chance of influencing cognition. However, Sutherland said that while emotions may be ‘hacked’ for short-term gain (he cites casinos where people may act against their own best interests), the real prize is found in practices that reflect the interests of the target. For him, data and understanding of emotions are of the highest importance to help give people what they really want, rather than what they say they want (he says that ‘reasoning leads to confusions’ and that arousal ‘can be preferred over our rational self and explanations’). Sutherland adds saying, ‘that businesses can make costly investment mistakes if they take people at their word’. Sutherland is also unashamed about use of emotional insights. Indeed, he says that ‘free markets will discern what people really want’ and that behavioural science and capitalism itself can ‘help’ give people what they truly wish for rather than what they say they want.

That’s advertising: Opportunism and ethics

The lack of queasiness in advertising about biometric data and emotional insights is illustrated by another agency, Strap. Based in Ohio, they are unique (in 2016) in that they make use of data generated by wearables. This includes data about steps, cycling, sleep, heart rate, food intake and sitting. The objective is to use this data to enhance relationships with companies by means of loyalty incentives (such as earning retailer points with steps), but also to use this data to target messages at the most relevant moment possible for a person. Their business model is explicitly opt-in and in interview Steve Caldwell and Patrick Henshaw, the company’s founders, highlight that, ‘Anything related to wearables and personal is opt-in. That’s very important. For personal data you have to be very clear about your opt-in processes’ (Interview, 2016). On being asked about the likelihood of mass use of emotional analytics, Caldwell responded saying that ‘the emotional profiling will definitely happen. Not sure it will be this year, but in time, with the amount of data and algorithms, it will become a reality’. Henshaw added:

The problem is making it scalable. Realeyes,¹ for instance, can do facial recognition on broadcasting advertising on say 100 people for an ad, but that’s not scalable. We want to make it scalable, to understand the consumer and in turn, trends, products and what they bought. But until there are more ambient sensors, e.g. in store or on display that can tell our emotions, then true emotional brand attachment will be difficult.

I also asked about connecting wearable, biometric and emotional data with other data employed by programmatic advertising companies. This is something Strap has not done yet (they are a small company refining their own product), but for them the potential is clear (and even more so for us if we consider the programmatic discussion earlier) in that not only can programmatic include screens and wearables, but also urban objects such as vending machines and in-store displays. Further, when empathic media and artificial emotional intelligence are seen against the backdrop of increased commercial interest in emotions (especially sentiment and emoji clustering), facial recognition and machine learning there is a degree of inevitability about its use. Indeed, all interviewees from the commercial sector agree that automated emotion detection will be important.

On ethics and ubiquity, there are mixed signals. Eleanor Heather and Ciosa Garrahan from Ogilvy Change observe that if empathic media and emotion

detection scale up to be widely used in advertising and retail, this could lead to over-use, choice overload (especially in retail) and thereafter a drop in engagement. However, the notion that data about emotions may be passively collected leads Garrahan to say that in time ‘these technologies will be everywhere’ and, although their rollout will be gradual, ‘emotion tracking is too much of an opportunity to miss.’ She further states that, ‘This will take place at a non-conscious level as technology and tracking is always on’ and that ‘this will end up being demanded as people prefer tailored content to irrelevant content’ (Interview, 2015). However, both Heather and Garrahan said that the advertising industry ‘have to tread carefully so not to sell on the basis of a person’s negative mental state’. While we did not explore this further, it seems unlikely that data about negative states would *not* be used by the advertising sector. For example, facial coding methodology (FACS) is based on negative as well as positive emotions, although Affectiva’s development kit does allow corporate users to privilege which emotions to scan for. Others took a different view recognising that advertising has always used negative emotions to sell. James Curran for example, of the aforementioned programmatic advertising firm DataXU (personal views rather than representative of company), highlights that advertising has always been aware of opportunities in negative states. He says that automated insights into negative as well as positive states are a massive opportunity and that, ‘Yes, it’s manipulative, but that’s advertising’ (Interview, 2016).

Legal factors: The argument for intimacy

In this section I focus explicitly on empathic media in advertising where it is claimed that no personal data is used – especially the M&C Saatchi, Clear Channel and Posterscope example that *evolves* unique ads based on people’s facial reactions. On developing and co-creating questions for the study, Iain Bourne, Simon Rice and Gemma Farmer – all from the Information Commissioner’s Office (ICO) – agreed that emotion detection in public is a novel development and that it is not unreasonable to consider data about emotions as a new class of data (Interview, 2015). I argue that this is a line of intellectual and regulatory inquiry worth investigating; namely, *is data that is intimate but not identifiable worthy of special protection?* Beyond the so-called creepy factor, I make this provocation for multiple reasons:

- There is a moral case to be made that intimate information should not be taken without consent;

- Information about emotions has potential to be affective (or the industry certainly thinks so);
- Emotion detection may alter the relationship between people and *their* public environments;
- Whereas an argument can be made about online advertising and the quid pro quo of data for media content, the rewards for emotion detection in public space is less clear (although one might argue Sutherland’s removal of ‘cognitive grit’ is adequate reward).

The current legal context is that if technologies do not create images of people, identify, individualise, single-out or generate code to treat an individual differently somehow, then the process is not regulated by data protection legislation in Europe. This is a strange situation because information about people’s faces is normally considered as personal information. In addition to working through the EU’s existing legislation, forthcoming General Data Protection Regulations (GDPR) (enforceable from 2018) and Article 29 opinions on soft biometrics,^{2,3} I interviewed data protection regulators in Brussels, law firms in London that handle media and technology cases, and a QC. Each provided different advice, although, in the case of the law firms, this should be seen in context of unpaid discussion where interviewees did not prepare answers to the questions posed in our conversations (although they did agree to publication of notes from the interview). The acid test of the legality of advertising enhanced by emotion detection in public spaces is whether any of the following questions are answered in the affirmative:

- Is a person identifiable from the data?
- Is a code attributed to a person?
- Is the person singled out in some way, even if this “singling” cannot be obviously linked back to a real living person?

This is echoed by Article 29 (2015) that clarifies purpose, scope and function of the nascent GDPR. On what constitutes personal data, Article 29 says: A natural person can be considered identifiable when, within a group of persons, they can be distinguished from others and consequently be treated differently. This means that the notion of identifiability should include singling out individuals (Article 29: 2015: 5). I pursued the question of whether data about emotions gathered by facial coding is legal with a senior employee of the European Commission. She/he is charged with understanding digital privacy law as it applies to advertising that tracks behaviour. The interviewee preferred anonymity because she/he recognizes the regulatory lacunae around emotion detection and potential legal

complexity. On emotion detection, she/he says that:

From a data protection perspective, and without prejudice of more detailed information on how the system works, *this is legal and does not require consent if the information collected does not qualify as personal data: i.e., it does not allow the identification of the person. This could be the case if the system does not collect the picture of a person's face and information gathered by scanning a person's face cannot be linked back directly or indirectly to a person.* (Interview, 2015 [italics agreed in correspondence over interview notes])

Further, she/he agreed that if facial coding technologies do become widely used by advertisers and marketers, this is not something the GDPR has envisaged. The result is a regulatory gap about data that is intimate (emotions), but not necessarily personal. I also met with three law firms with an interest in media and technology in London to discuss the legality of emotion detection in public spaces. Although European law is relatively clear on this and my interviewee within the Commission was unequivocal, emotion detection has not been tested in court yet where counter-arguments can be made. Ashley Roughton, a partner at Nabarro says that, '*consent is always required* because identification is always possible (no ifs or buts)' (Interview, 2015 [italics agreed in correspondence over interview notes]). This presents a different picture than my interpretation of European law (and from my interviewee from the Commission). There are two reasons for this. The first is from Roughton who hypothesizes that there might only be a single person at the bus stop (that hosts the ad). As the only data generated that day is from one person, it is reasonable to argue that a person has been 'singled out'. The second criticism (made by a range of interviewees) is a more general criticism of Big Data analytics. This is the 'mosaic' or 'jigsaw' effect whereby data categorized as non-personally identifiable can be combined with other existing sets of information to re-identify that person (Ohm, 2009).

Timothy Pitt-Payne is a QC with the law firm 11KBW, who specializes in data protection and privacy. In interview, Pitt-Payne agreed that the campaign in question by M&C Saatchi only makes use of aggregated information that cannot be tracked back to the individual (although he did not have opportunity to inspect the technology itself). This led him to identify that the question of legality hinges upon whether a person is singled out. He says that although the singling out principle may not apply in this instance of out-of-home advertising that makes use of emotion detection advertising, the case of retail is more complex. (His comment is based on my explanation of application of facial emotional detection in retail environments.) For Pitt-Payne, retail

is less straightforward because it makes use of further signifiers such as gender and reacts on a per-person basis. Thus, although the data might not be traceable back to a living individual, it does single people out for collection and processing. This applies to other actors in the digital out-of-home sector such as Ocean Outdoor who are using age and gender detection to serve ads. Although Pitt-Payne expressed concern about the rise of automated emotion detection, he also provides counter-factual thinking by questioning the norms and rules of governance of private and public spaces. On what should be allowed to take place in public, he highlights that we typically avoid chuggers (a portmanteau of "charity" and "mugger") who catch our gaze and detect whether people are emotionally and behaviourally good targets. We might say the same of sales people. Ultimately, the point is this: what are *reasonable expectations* in public spaces and does it matter if a person or a machine is detecting emotion?

Daniel Tench, partner at the media law firm Olswang, takes a different view from the identity-based argument that I, and others, made. He highlights that 'privacy law has some flexibility' and there is a case to be made about emotion-sensitive technologies (Interview, 2015). Although perfectly aware of the connection between privacy, personal data and consent; he also says that there is scope for a case to be brought on the basis of feeling *aggrieved* by what is taking place in a public space. He cites two cases both involving photography: photos of the author JK Rowling's son⁴ and (in a separate case) the musician Paul Weller.⁵ Although these involved photos of children taken by newspapers, the case was less about the principle of identification than intrusiveness, particularly in public spaces, and especially when a person has not consented to having information used about them. Another argument that has precedent in the domain of online behavioural tracking of users is the idea that a company engaging in surveillance of emotions (even of the non-personal sort) is '*stealing information*'. Tench points to the Vidal Hall vs. Google case in 2015⁶ whereby Google were caught employing workarounds to get past Apple Safari's settings to block Third Party Cookies. This was done to enable the tracking and collection of browser activity for the purposes of Google's AdSense advertising service. Less important than that the case is about advertising is that invasion of privacy was not deemed to be about financial loss or material harms, but *distress*. For Tench the point is that stealing (and extracting data about emotional responses) for commercial benefit is an over-reach of what is allowed in public spaces. This comes down to what Tench phrased as *inherent privacy*. This is the question of whether there are aspects of life that are to be fundamentally privileged and not just conventionally so (see Westin, 1967).

For contemporary media and privacy scholars this is a difficult proposition because modern understanding of privacy typically sees it as dynamic in that the nature of privacy requirements changes depending on actors, situation, context or indeed convention (McStay, 2014; boyd, 2012; Marwick and boyd, 2014). By aligning privacy with a principle as basic as theft, what Tench proposes is of a more innate deontic nature, perhaps more akin to civic virtue and righteous public behaviour.

Other factors play a role too, particularly Article 8 of the European Convention on Human Rights and the right to 'Respect for private and a family life'. Although privacy is usually considered in terms of identification, Tench suggests that although emphasis is generally placed on what constitutes private, the premise of 'Respect' for private and family life could be applied to emotion detection in public. Tench suggests that recent cases have placed more weight on this premise which provides possibility for a case to be made on the basis of violation and feeling aggrieved.

What is clear is that empathic media, emotional analytics and emotion detection in public spaces do not have precedent in UK law and are therefore on the cusp of English legal protection. This leads to my key claim: *While emotion detection might not make use of information that is personally identifiable and legally private, it certainly makes use of information that is intimate.* Information about emotions feels personal because emotional life is core to personhood and while data may not be identifiable, it certainly connects with a fundamental dimension of human experience. This gives it special value. Taking the various points of legal advice together and the clear lacuna in European regulation regarding emotional detection and the suite of empathic media technologies, I suggest a new class of privacy considerations based on *intimacy* rather than identity. This both clarifies existing interests in privacy harms (through distress) that are not contingent upon identification, but also recognizes that the data environment of today and tomorrow is making use of increasingly more sensitive information about ourselves. I suggest that any regulatory development along these lines should take into account the degree of control a person has over emotion detection.

What do ordinary people think?

So far I have detailed views about empathic media and emotion detection of people from within the advertising industry, European Commission and legal experts. However, I was also interested in citizens' responses to these developments. To explore this I carried out a structured quantitative survey with ICM Unlimited of 2,068 UK people (excluding Northern Ireland),

demographically representative across gender types, age, social class and regions. The following question was posed to people:

Advertising agencies have developed outdoor ads equipped with cameras that scan onlookers' faces to work out our emotions towards the ad.

If our reactions are not positive the ad changes itself to be more appealing. Which of the following best represents your feelings about this?

Respondents were able to choose one of four statements:⁷

1. I am not OK with my data about me being collected in this way (Not OK).
2. I am OK with data collection about my emotions in this way as long as the information is anonymised and cannot be associated with me, my email address, phone number or any other possible means of personally identifying me (OK/no PI).
3. I am OK with data collection about my emotional state in this way and OK for this data to be linked with personal information held about me (OK/PI).
4. Don't know (DK)

Table 1 provides the overall headline result of all survey respondents. Although I tested for responses segmented by gender, social class and region, I have not included this data because these variables had no significant influence on reported feelings about emotion detection. In contrast, Table 2 on age is a variable potentially of interest to academics, policy makers and industry alike.⁸

These findings come with methodological caveats. Participants were simply asked the question given and were provided no contextual information about how the technology works, or the granularity of data collection (in the case of M&C Saatchi's test ad, this was very basic). However, notwithstanding methodological concerns already flagged earlier, the survey indicates that half of UK citizens are not OK with any form of automated emotion detection using facial coding (Table 1, statement 1), although 41% say that they

Table 1. UK citizens' feelings in 2015 about emotion detection in out-of-home advertising.

Statement	Number of people (<i>n</i> = 2068)	Percentage
1 (Not OK)	1,028	50%
2 (OK/no PI)	687	33%
3 (OK/PI)	163	8%
4 (DK)	190	9%

Table 2. Using age to segment UK citizens' feelings in 2015 about emotion detection in out-of-home advertising.

Statement	16–24 (<i>n</i> = 248)	25–34 (<i>n</i> = 331)	35–44 (<i>n</i> = 393)	45–54 (<i>n</i> = 351)	55–64 (<i>n</i> = 310)	65 + (<i>n</i> = 434)
1 (Not OK)	85 (34%)	137 (42%)	191 (49%)	163 (46%)	187 (60%)	265 (61%)
2 (OK/no PI)	107 (43%)	113 (34%)	118 (30%)	124 (35%)	95 (31%)	129 (30%)
3 (OK/PI)	32 (13%)	41 (12%)	43 (11%)	28 (8%)	11 (4%)	8 (2%)
4 (DK)	23 (9%)	39 (12%)	41 (11%)	36 (10%)	17 (6%)	33 (8%)

are OK with some form of detection (see Table 1, statements 2 and 3).

However, across all indicators and categories sampled, few people were OK with having data about their emotional state linked with personal information (see Tables 1 and 2, and statement 3). That people do not want data about their emotional state linked with personal information is significant, particularly for automated emotion detection in the future. As outlined in the discussion of industry perspectives, there is clear opportunity to link emotion-aware digital out-of-home advertising with data management platforms and programmatic advertising. We should consider this premise in context of increased prevalence of facial recognition and machine learning, and attempts by advertisers to link data about emotions and reactions to ads with other information (such as first-party information held by brands), social media profiles and images online, or device-level information (such as cookies and Advertising IDs on mobile devices). UK citizens are clearly 'not OK' with this proposition. Although gender, social class and region were not significant, age is. As depicted in Table 2, the most notable trend is in response to Statement 1. In general, young people (18–24s) are far more receptive than older generations to the idea of emotion detection in out-of-home advertising. Indeed, as we progress through the youngest to the oldest, there is a relatively upward trend of concern about automated emotion tracking in advertising. The other notable factor in the age category is when Statements 2 and 3 are taken together. This indicates that over half of young people are 'OK' with some form of automated emotion detection in advertising (56%). However, this should be tempered with the fact that only 13% are 'OK' with having data emotions linked with personal data.

Conclusion

This empirically oriented paper has accounted for automated emotion detection by means of facial coding in out-of-home advertising. The theoretical context of this discussion is recent interest in the economics of attention and experience (Terranova, 2012), affect and data

(Andrejevic, 2013), and what Davies (2015) terms happiness economics. In an advertising context, empathic media is a combination of online behaviour tracking and the commercial application of neuroscience. The programmatic opportunity of emotional-enhanced digital out-of-home advertising is clear in that it can, in theory, be bought and sold by data management platforms. Further, the biometric and emotional data gleaned can also be factored into these platforms. However, today, there are practical hindrances to this, not least lack of industry standards for trading data about emotions.

While there is much to speculate and prepare for, I focused on current techniques that do not make use of personal data. Intimate data raises legal and ethical questions; not least whether it is acceptable to make automated use of human emotions in public spaces. Critical attention is required but at this stage I do not suggest a new legal class of data, but that data protection authorities and regulators such as Article 29 pay closer attention to the development of emotion detection. Self-regulatory bodies and trade organisations (such as ESOMAR, IAB and the Committee of Advertising Practice among others) are also encouraged to consider meaningful consent, even for emotion detection that cannot be linked with non-personal data. For some readers what amounts to a self- and co-regulatory solution will be highly unsatisfactory, especially those with expertise in online media, behavioural advertising, self-regulation and privacy. Their argument will be that a voluntary code of ethics has no power or real means of enforcement or censure. I accept this but at the time of writing it is unproductive to believe that European regulators (and beyond) will revise the most fundamental principles of data protection. Rather, the intention of my suggestion is an interim one that reflects the novelty and current rarity of emotion detection in advertising. My approach is watch, wait, see and, if need be, act. If required, options include lobbying for policy change, or perhaps even a court case argued on the grounds of reasonable expectations of public space, aggravation, intrusiveness, distress, respect and protection of fundamental dimensions of human experience.

The fact that half of UK citizens are not happy with *any* form of automated emotion detection in advertising using facial coding is significant. Industry has self-interest in good civic behaviour and not making use of data about emotions without explicit agreement. This may be achieved by being creative rather than abusive. By this I mean that young people, for example, appear to be more receptive to the idea of emotion detection in out-of-home advertising and are overall 'OK' with emotion detection, although this is heavily skewed towards non-personal detection. This should not be read as license to engage in passive always-on data collection throughout public space, but discrete opportunities for novel, opt-in and fun interactive experiences. Negative emotions should not be used to sell.

Onveillance, the theme of this special issue, there is certainly scope to sense the sensors and buck emotion detection systems. I discussed this with Steve Mann and his team after a talk I co-delivered in Toronto in 2016 (Bakir and McStay, 2016), who suggested that if such practices became ubiquitous, we might blind cameras with infrared light, and wear war paint and zigzags on our faces to disrupt scanners. These are possible, but placing stickers on billboards and cameras, perhaps something along the lines of 'CONSENT NOT GIVEN' or 'EMOTION DETECTION IS THEFT', is more realistic. Maybe there is also small amusement to be had in disrupting the system and injecting carnival into everyday life by pulling strange faces. My feeling however is that if regulation failed entirely, and such guerilla tactics are necessary, something more collective than personal acts of political sousveillance will be required.

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Notes

1. A facial analytics company (also interviewed for this study) that conducts in-house emotion detection, particularly about responses to advertising.

2. This replaces the Data Protection Directive, which is a European Union (EU) directive adopted in 1995 that regulates the processing of personal data within the EU.

3. The Article 29 Working Party is composed of representatives of the national data protection authorities (DPA), the European Data Protection Supervisor and the European

Commission. They publish opinions about regulations and key political and technological developments.

4. Details of *Murray v Express Newspapers plc* and another, available at: <http://lexisweb.co.uk/cases/2008/may/murray-v-express-newspapers-plc-and-another>
5. Details of *Weller v Associated Newspapers Ltd* available at: <https://www.judiciary.gov.uk/judgments/weller-v-associated-newspapers-ltd/>
6. Details of *Vidal Hall v Google* available at: <https://www.judiciary.gov.uk/wp-content/uploads/2015/03/google-v-vidal-hall-judgment.pdf>
7. For ease of reading the tables below, I have summarised each question in the brackets. The bracketed summary did not appear for respondents.
8. Application of weighting to the results to ensure that the sample's distribution is nationally representative can leave some respondents as fractional, causing columns to not always total 100%. As tables are reported within whole numbers, rounding means the total and summed numbers are 1, or at most 2, out from each other.

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